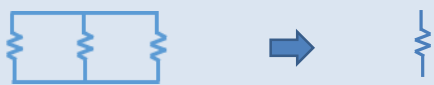## CONCEPT: SOLVING RESISTOR CIRCUITS

● In Circuit problems, you will need to find the CURRENT and VOLTAGE of different Resistors.

| SERIES CONNECTION	PARALLEL CONNECTION
- Equivalent Resistance: $$R_{eq} = R_1 + R_2 + R_3$$ - Share [CURRENT / VOLTAGE] with EACH OTHER - Share [CURRENT / VOLTAGE] with EQUIVALENT Resistor	- Equivalent Resistance: $$1/R_{eq} = 1/R_1 + 1/R_2 + 1/R_3$$ - Share [CURRENT / VOLTAGE] with EACH OTHER - Share [CURRENT / VOLTAGE] with EQUIVALENT Resistor

● STEPS for Solving Resistor Circuits:

1) "Collapse" down to ONE EQUIVALENT Resistor

2) Find VOLTAGE and CURRENT on Equivalent Resistor

3) "Work backwards" noting VOLTAGE and CURRENT on EACH Resistor

EXAMPLE: What is the current and voltage of each of the resistors in the following circuit?
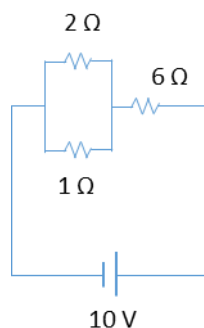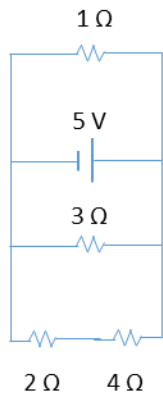
PRACTICE: FIND CURRENT & VOLTAGE IN ALL RESISTORS

What is current and voltage across each resistor below?
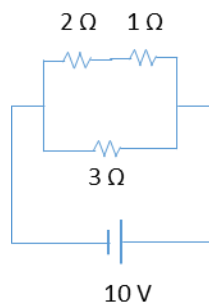
EXAMPLE: FIND CURRENT OF ONE CAPACITOR

What is the current on the 3 Ω resistor below?

1 Ω

5 V

3 Ω

2 Ω   4 Ω

PRACTICE: FIND VOLTAGE OF THE BATTERY

What is the voltage of the battery below?